

Listing of Claims:

Claims 1-8 (canceled).

Claim 9 (currently amended): A method In a system for combining a first substance with a second substance that cannot be mixed directly with the first substance without damaging at least one of the first substance and the second substance, the a method comprising:

mixing the first substance with a first liquid to produce a first solution, the first solution having a first predetermined concentration of first substance capable of being mixed directly with the second substance without damaging one of the first substance and the second substance;

maintaining a timer to monitor the age of the first solution;

determining whether mixing of the first solution with the second substance to produce a second solution having a second predetermined concentration of first substance relative to the second substance can be completed within a predetermined useful lifetime of prior to an expiration time for the first solution based on the timer; and

mixing the first solution with the second substance to produce the second solution only if it is determined that mixing of the first solution with the second substance to produce the second solution can be completed within the predetermined useful lifetime of prior to the expiration time for the first solution.

Claim 10 (original): A method according to claim 9, wherein the first substance comprises an anti-pathogen compound and the second substance comprises red blood cell concentrate.

Claim 11 (original): A method according to claim 10, wherein the first liquid comprises a buffer solution.

Claim 12 (original): A method according to claim 9, wherein the first liquid comprises a diluting solution.

Claims 13-34 (canceled).

Claim 35 (currently amended): A method according to claim 9, wherein determining whether the first solution can be mixed with the second substance to produce the second solution within the predetermined useful lifetime of prior to the expiration time for the first solution comprises:

determining an elapsed time since production of the first solution.

Claim 36 (currently amended): A method according to claim 35, wherein determining whether the first solution can be mixed with the second substance to produce the second solution within the predetermined useful lifetime of prior to the expiration time for the first solution further comprises:

comparing the elapsed time with a predetermined time limit.

Claim 37 (currently amended): A method according to claim 9, wherein the first substance is mixed with the first liquid in a first process and the first solution is mixed with the second substance in a second process, and wherein the second process is permitted to commence only if it is determined that mixing of the first solution with the second substance to produce the second solution can

be completed within the predetermined useful lifetime of prior to the expiration time for the first solution.

Claim 38 (currently amended): A method according to claim 9, wherein the first substance is mixed with the first liquid in a first process and the first solution is mixed with the second substance in a second process, and wherein the second process is prevented from commencing if it is determined that mixing of the first solution with the second substance to produce the second solution cannot be completed within the predetermined useful lifetime of prior to the expiration time for the first solution.

Claim 39 (currently amended): A method according to claim 9, further comprising:

 determining whether there is a sufficient quantity of first solution to mix with the second substance to produce the second solution; and

 mixing the first solution with the second substance to produce the second solution only if it is determined that there is a sufficient quantity of first solution to mix with the second substance.

Claim 40 (previously presented): A method according to claim 39, wherein determining whether there is a sufficient quantity of first solution comprises:
 monitoring the quantity of first solution produced.

Claim 41 (previously presented): A method according to claim 39, wherein determining whether there is a sufficient quantity of first solution comprises:

monitoring the quantity of first solution remaining after an earlier production of second solution.

Claim 42 (previously presented): A method according to claim 41, wherein monitoring the quantity of first solution remaining after an earlier production of second solution comprises:

- determining the quantity of first solution initially produced;
- determining the quantity of first solution used in the earlier production of second solution; and
- determining the quantity of first solution remaining based on the quantity of first solution initially produced and the quantity of first solution used in the earlier production.

Claim 43 (currently amended): A method according to claim 39, wherein the first substance is mixed with the first liquid in a first process and the first solution is mixed with the second substance in a second process, and wherein the second process is permitted to commence only if it is determined that there is a sufficient quantity of first solution to mix with the second substance and mixing of the first solution with the second substance to produce the second solution can be completed within the predetermined useful lifetime of prior to the expiration time for the first solution.

Claim 44 (currently amended): A method according to claim 39, wherein the first substance is mixed with the first liquid in a first process and the first solution is mixed with the second substance in a second process, and wherein the second process is prevented from commencing if it is determined that there is an

insufficient quantity of first solution to mix with the second substance or mixing of the first solution with the second substance to produce the second solution cannot be completed within the predetermined useful lifetime of prior to the expiration time for the first solution.

Claim 45 (currently amended): A computer controlled method In a system for combining a first substance with a second substance that cannot be mixed directly with the first substance without damaging at least one of the first substance and the second substance, the a computer controlled method comprising:

preparing a first solution having a first predetermined concentration of first substance capable of being mixed directly with the second substance without damaging one of the first substance and the second substance;

maintaining a timer to monitor the age of the first solution;

determining whether mixing of the first solution with the second substance to produce a second solution having a second predetermined concentration of first substance relative to the second substance can be completed within a predetermined useful lifetime of prior to an expiration time for the first solution based on the timer; and

permitting mixing of the first solution with the second substance to produce the second solution only if it is determined that mixing of the first solution with the second substance to produce the second solution can be completed within the predetermined useful lifetime of prior to the expiration time for the first solution.

Claim 46 (previously presented): A method according to claim 45, wherein the first substance comprises an anti-pathogen compound and the second substance comprises red blood cell concentrate.

Claim 47 (previously presented): A method according to claim 46, wherein the first liquid comprises a buffer solution.

Claim 48 (previously presented): A method according to claim 45, wherein the first liquid comprises a diluting solution.

Claim 49 (currently amended): A method according to claim 45, wherein determining whether the first solution can be mixed with the second substance to produce the second solution within the predetermined useful lifetime of prior to the expiration time for the first solution comprises:

determining an elapsed time since production of the first solution.

Claim 50 (currently amended): A method according to claim 49, wherein determining whether the first solution can be mixed with the second substance to produce the second solution within the predetermined useful lifetime of prior to the expiration time for the first solution further comprises:

comparing the elapsed time with a predetermined time limit.

Claim 51 (currently amended): A method according to claim 45, wherein the first substance is mixed with the first liquid in a first process and the first solution is mixed with the second substance in a second process, and wherein the second process is permitted to commence only if it is determined that mixing of

the first solution with the second substance to produce the second solution can be completed within the predetermined useful lifetime of prior to the expiration time for the first solution.

Claim 52 (currently amended): A method according to claim 45, wherein the first substance is mixed with the first liquid in a first process and the first solution is mixed with the second substance in a second process, and wherein the second process is prevented from commencing if it is determined that mixing of the first solution with the second substance to produce the second solution cannot be completed within the predetermined useful lifetime of prior to the expiration time for the first solution.

Claim 53 (currently amended): A method according to claim 45, further comprising:

determining whether there is a sufficient quantity of first solution to mix with the second substance to produce the second solution; and

permitting mixing of the first solution with the second substance to produce the second solution only if it is determined that there is a sufficient quantity of first solution to mix with the second substance.

Claim 54 (previously presented): A method according to claim 53, wherein determining whether there is a sufficient quantity of first solution comprises:
monitoring the quantity of first solution produced.

Claim 55 (previously presented): A method according to claim 53, wherein determining whether there is a sufficient quantity of first solution comprises:

monitoring the quantity of first solution remaining after an earlier production of second solution.

Claim 56 (previously presented): A method according to claim 55, wherein monitoring the quantity of first solution remaining after an earlier production of second solution comprises:

- determining the quantity of first solution initially produced;
- determining the quantity of first solution used in the earlier production of second solution; and
- determining the quantity of first solution remaining based on the quantity of first solution initially produced and the quantity of first solution used in the earlier production.

Claim 57 (currently amended): A method according to claim 45, wherein the first substance is mixed with the first liquid in a first process and the first solution is mixed with the second substance in a second process, and wherein the second process is permitted to commence only if it is determined that there is a sufficient quantity of first solution to mix with the second substance and mixing of the first solution with the second substance to produce the second solution can be completed within the predetermined useful lifetime of prior to the expiration time for the first solution.

Claim 58 (currently amended): A method according to claim 45, wherein the first substance is mixed with the first liquid in a first process and the first solution is mixed with the second substance in a second process, and wherein the second process is prevented from commencing if it determined that there is an

insufficient quantity of first solution to mix with the second substance or mixing of the first solution with the second substance to produce the second solution cannot be completed within the predetermined useful lifetime of prior to the expiration time for the first solution.